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[54] 发明名称 非含氟烃的气雾剂配方

[57] 摘要

叙述了用于口和/或鼻给药的基本上不含氟烃的气雾剂配方。该配方含有 1,1,1,2-四氟乙烷、药物、任选地赋形剂和任选地表面活性剂。还叙述了使用这种配方的治疗方法。

权 利 要 求 书

1. 一种气雾剂配方，其中主要含有：

A. 有效数量的药物；

B. 1, 1, 1, 2, 3, 3, 3-七氟丙烷；以及任选地，一种或几种选自一类或几类下列物质的组分：

赋形剂；

表面活性剂；和

防腐剂、缓冲剂、抗氧化剂、甜味剂和遮味剂等添加剂。

2. 权利要求1的配方，其中赋形剂选自以下物质：

中等链长脂肪酸的丙二醇二酯；

中等链长脂肪酸的甘油三酯；

全氟二甲基环丁烷；

全氟环丁烷；

聚乙二醇；

薄荷醇；

月桂二醇；

二甘醇单乙醚；

聚乙二醇化的中等链长脂肪酸甘油酯；

醇；

短链脂肪酸；

桉叶油；以及它们的混合物。

3. 权利要求1的配方，其中表面活性剂选自以下化合物：

油酸；

脱水山梨糖醇三油酸酯；

氯化十六烷基吡啶鎓；

大豆卵磷脂；

聚氧乙烯(20)脱水山梨糖醇单月桂酸酯；

聚氧乙烯(20)脱水山梨糖醇单硬脂酸酯；

聚氧乙烯(20)脱水山梨糖醇单油酸酯；

聚氧乙烯(10)十八烷醚；

聚氧乙烯(2)油醚；

聚氧乙烯-聚氧丙烯-乙二醇嵌段共聚物；

聚氧丙烯-聚氧乙烯嵌段共聚物；

蓖麻油乙氧基化物；以及它们的混合物。

4. 权利要求1的配方，其中的药物选自舒喘宁、*metasone furoate*、二丙酸氯地米松、异丙肾上腺素、肝素、间羟叔丁肾上腺素、羟甲苯二酚、*Perbuterol*、色甘酸二钠、异丙肾上腺素、肾上腺素、戊烷眯、溴化异丙托品、以及它们的盐和笼形物。

5. 权利要求4的配方，其中药物选自舒喘宁、舒喘宁硫酸盐、二丙酸氯地米松、二丙酸氯地米松笼形物和*metasone furoate*。

6. 权利要求5的配方，它基本上不含含氯氟烃。

7. 权利要求5的配方，其中含有赋形剂，选自二甘醇单乙醚、中等链长脂肪酸的丙二醇二酯、全氟二甲基环丁烷和聚乙二醇。

8. 权利要求7的配方，其中含有表面活性剂，选自油酸、脱水山梨糖醇三油酸酯、氯化十六烷基吡啶鎓和大豆卵磷脂。

9. 权利要求1的配方，其中含有数量如下的以下组分

药物	0.01-1%(重量)
1,1,1,2,3,3,3-七氟丙烷	25-99.99%(重量)
赋形剂	0-75%(重量)
表面活性剂	0-3%(重量)

10. 权利要求9的配方,其中含有数量如下的以下组分:

药物	0.03-0.7%(重量)
1,1,1,2,3,3,3-七氟丙烷	50-99.97%(重量)
赋形剂	0-50%(重量)
表面活性剂	0-2%(重量)

11. 权利要求10的配方,其中含有数量如下的以下组分:

药物	0.05-0.5%(重量)
1,1,1,2,3,3,3-七氟丙烷	50-99.95%(重量)
赋形剂	0-50%(重量)
表面活性剂	0-1%(重量)

12. 权利要求9的配方,其中药物是平均粒度约为1-5微米的粉末。

13. 一种治疗哺乳动物的方法,包括给哺乳动物有效数量的权利要求1的气雾剂配方。

14. 一种治疗哺乳动物气喘病的方法,包括给需要这种治疗的哺乳动物有效数量的气雾剂配方,该配方主要含有:

A. 药物,选自舒喘宁、mometasone furoate、二丙酸氯地米松、以及它们的盐和笼形物;

B. 1,1,1,2,3,3,3-七氟丙烷;

C. 任选地，选自以下物质的赋形剂：

中等链长脂肪酸的丙二醇二酯；

中等链长脂肪酸的甘油三酯；

全氟二甲基环丁烷；

全氟环丁烷；

聚乙二醇；

薄荷醇；

月桂二醇；

二甘醇单乙醚；

聚乙二醇化的中等链长脂肪酸甘油酯；

醇；

短链脂肪酸；

桉叶油；以及它们的混合物；

D. 任选地，选自以下物质的表面活性剂：

油酸；

脱水山梨糖醇三油酸酯；

氯化十六烷基吡啶鎓；

大豆卵磷脂；

聚氧乙烯(20)脱水山梨糖醇单月桂酸酯；

聚氧乙烯(20)脱水山梨糖醇单硬脂酸酯；

聚氧乙烯(20)脱水山梨糖醇单油酸酯；

聚氧乙烯(10)十八烷醚；

聚氧乙烯(2)油醚；

聚氧乙烯-聚氧丙烯-乙二胺嵌段共聚物；

聚氧丙烯—聚氧乙烯嵌段共聚物；

蓖麻油乙氧基化物；以及它们的混合物；

和

E. 任选地一种或几种添加剂，选自以下几类物质中的至少一类：

防腐剂；

缓冲剂；

抗氧化剂；

甜味剂；和

遮味剂。

15. 一种制备气雾剂配方的方法，该方法包括将 1, 1, 1, 2, 3, 3, 3-七氟丙烷与药物和，任选地，一种或几种选自下列至少一类的组分相混合：

赋形剂；

表面活性剂；和

添加剂，该添加剂是防腐剂、缓冲剂、抗氧化剂、甜味剂和遮味剂。



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Translation of the Claims of CN1067579A:

1. An aerosol formulation consisting essentially of:
 - A. an effective amount of a medicament;
 - B. 1,1,1,1,2,3,3,3,7 heptafluoropropane; and optionally, one or more components selected from at least one of the following:
 - excipients;
 - surfactants; and
 - additives which are
 - preservatives;
 - buffers;
 - antioxidants;
 - sweeteners; and
 - taste masking agents.
2. The formulation of claim 1 wherein the excipient is selected from the group consisting of:
 - propylene glycol diesters of medium chain fatty acids;
 - triglyceride esters of medium chain fatty acids;
 - perfluorodimethylcyclobutane;
 - perfluorocyclobutane;
 - polyethylene glycol;
 - menthol;
 - lauroglycol;
 - diethylglycol monoethylether;
 - polyglycolized glycerides of medium chain fatty acids;
 - alcohols;
 - short chain fatty acids;
 - eucalyptus oil; and combinations thereof.
3. The formulation of claim 1 wherein the surfactant is selected from the group consisting of:
 - oleic acid;

sorbitan trioleate;
cetyl pyridinium chloride;
soya lecithin;
polyoxyethylene (20) sorbitan monolaurate;
polyoxyethylene(20) sorbitan monostearate;
polyoxyethylene(20) sorbitan monooleate;
polyoxyethylene (10) stearyl ether;
polyoxyethylene (2) oleyl ether;
polyoxyethylene-polyoxypropylene-ethylenediamine block copolymers;
polyoxypropylene-polyoxyethylene block copolymers;
castor oil ethoxylate; and combinations thereof.

4. The formulation of claim 1 wherein the medicament is selected from the group consisting of: albuterol, mometasone furoate, beclomethasone dipropionate, isoproterenol, heparin, terbutaline, rimiterol, perbuterol, disodium cromoglycate, isoprenaline, adrenaline, pentamidine, ipratropium bromide, and salts and clathrates thereof.
5. The formulation of claim 4 wherein the medicament is selected from the group consisting of: albuterol, albuterol sulfate beclomethasone dipropionate, beclomethasone dipropionate clathrates and mometasone furoate.
6. The formulation of claim 6 which is substantially free of chlorofluorocarbons.
7. The formulation of claim 5 containing an excipient selected from the group consisting of diethylene glycol monoethyl ether, propylene glycol diesters of medium chain fatty acids, perfluorodimethylcyclobutane and polyethylene glycol.
8. The formulation of claim 7 containing a surfactant selected from the group consisting of: oleic acid, sorbitan trioleate, cetyl

pyridinium chloride and soya lecithin.

9. The formulation of claim 1 containing the following components in the indicated ranges:

medicament	0.01-1 wt %
1,1,1,1,2,3,3,3,7 heptafluoropropane	25 -99.99 wt %
excipient	0-75 wt%
surfactant	0-3 wt%

10. The formulation of claim 9 containing the following components in the indicated ranges:

medicament	0.03-0.7 wt%
1,1,1,1,2,3,3,3,7 heptafluoropropane	50-99.97 wt%
excipient	0-50 wt%
surfactant	0 - 2 wt%

11. The formulation of claim 10 containing the following components in the indicated ranges:

medicament	0.05-0.5 wt%
1,1,1,1,2,3,3,3,7 heptafluoropropane	50-99.95 wt%
excipient	0 - 50 wt%
surfactant	0 - 1 wt%

12. The formulation of claim 9 wherein the medicament is a powder having a mean particle size of about 1-5 microns.

13. A method for treating mammals comprising administering to said mammals an effective amount the aerosol formulation of claim 1.

14. A method of treating asthma in mammals comprising administering to a mammal in need of such treatment an effective amount of aerosol formulation consisting essentially of:

A. a medicament selected from the group comprising albuterol, mometasone furoate, beclomethasone dipropionate, and salts and clathrates thereof;

- B. 1,1,1,2,3,3,3,7 heptafluoropropane;
- C. optionally an excipient selected from the group consisting of:
propylene glycol diesters of medium chain fatty acids;
triglyceride esters of medium chain fatty acids;
perfluorodimethylcyclobutane;
perfluorocyclobutane;
polyethylene glycol; menthol; lauroglycol;
diethylglycol monoethylether;
polyglycolized glycerides of medium chain fatty acids;
alcohols;
short chain fatty acids;
eucalyptus oil; and combinations thereof;
- D. optionally a surfactant selected from the group consisting of:
oleic acid;
sorbitan trioleate;
cetyl pyridinium chloride; soya lecithin;
polyoxyethylene (20) sorbitan monolaurate;
polyoxyethylene (20) sorbitan monostearate;
polyoxyethylene (20) sorbitan monooleate;
polyoxyethylene (10) stearyl ether;
polyoxyethylene (2) oleyl ether;
polyethylene-polyoxypropylene-ethylenediamine block copolymers;
polyoxypropylene-polyoxyethylene block copolymers;
castor oil ethoxylate; and combinations thereof; and
- E. optionally one or more additives selected from at least one of the following classes:
preservatives;
buffers;
antioxidants;
sweeteners; and
taste masking agents.

15. A method for preparing aerosol formulation comprising mixing 1,1,1,1,2,3,3,3,7 heptafluoropropane with the medicament and optionally one or more components selected from the followings:

excipients;
surfactant;
additives which are
preservatives;
buffers;
antioxidants;
sweeteners; and
taste masking agents.